Listing of the Claims:

1-48. (Cancelled)

49. (Currently Amended) A method for detecting rheumatoid arthritis in a human test subject, said method comprising:

a) quantifying ~~Quantifying in RNA of a blood sample from said test subject,~~ a level of RNA encoded by ~~the gene~~ a ~~C~~cell division cycle associated 1 (CDCA1) gene in a blood ~~said~~ sample of said test subject; and

b) comparing ~~Comparing~~ said ~~quantified~~ level of RNA in said sample of said test subject with a quantified level of control RNA encoded by said gene in ~~RNA of~~ blood samples ~~from~~ of control subjects which are classified as healthy control subjects; and

c) comparing said level of RNA in said sample of said test subject with a quantified level of control RNA encoded by said gene in blood samples of control subjects which are classified as having rheumatoid arthritis;

wherein ~~said comparison of~~ a statistically significant determination resulting from steps (b) and (c) that expression of said ~~quantified level of step (a) with~~ gene in said sample of said test subject is different relative to ~~said quantified level of~~ said samples of said control ~~RNA~~ subjects classified as healthy control subjects, and is similar relative to said samples of said control subjects classified as having rheumatoid arthritis is indicative of rheumatoid arthritis in said human test subject.

50. (Currently Amended) The method of claim 49, wherein said blood sample of ~~step (a)~~ said test subject and said blood samples ~~from~~ of said control subjects ~~in step (b)~~ are selected from the group consisting of whole blood samples, blood samples which have not been fractionated into cell types and blood samples which comprise leukocytes which have not been fractionated into cell types.

51. (Cancelled) ~~The method of claim 49, wherein said blood sample of step (a) and said blood samples from said control subjects in step (b) are unfractionated samples of lysed blood.~~

52. (Currently Amended) The method of ~~any of~~ claims 49 or 60, ~~50 or 51,~~ wherein said quantifying of said level of ~~said~~ RNA encoded by said gene in said sample of said test subject ~~in step (a)~~ is effected ~~by quantifying said RNA~~ relative to a housekeeping gene.

53. (Currently Amended) The method of ~~any of~~ claims 49 or 60, ~~50 or 51,~~ wherein said quantifying of said level of ~~said~~ RNA encoded by said gene in said sample of said test subject ~~in step (a)~~ is effected by quantification of cDNA complementary ~~corresponding~~ to ~~said~~ RNA encoded by said gene.

54. (Cancelled)

55. (Cancelled)

56. (Currently Amended) The method of ~~any of~~ claims 49 or 60, ~~50 or 51,~~ wherein said quantifying of said level of ~~said~~ RNA encoded by said gene ~~in step (a)~~ is effected ~~determined~~ using quantitative ~~real-time RT~~ PCR.

57. (Currently Amended) The method of ~~any of~~ claims 49 or 60, ~~50 or 51,~~ wherein said quantifying of said level of ~~said~~ RNA encoded by said gene ~~in step (a)~~ is effected ~~determined~~ using an array.

58. (New) A method for detecting expression of a cell division cycle associated 1 (CDCA1) gene in a human test subject, said method comprising detecting RNA encoded by said gene in a blood sample of said test subject, using an oligonucleotide of predetermined sequence which is specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample.

59. (New) The method of claim 59, wherein said detecting of RNA comprises producing an amplification product from RNA encoded by said gene in said blood sample of said test subject, using primers specific only for RNA encoded by said gene and/or for cDNA complementary to RNA encoded by said gene.

60. (New) The method of claim 58 or 59, further comprising quantifying a level of RNA encoded by said gene in said sample.

61. (New) The method of claim 60, further comprising comparing said level of RNA to a quantified level of control RNA encoded by said gene in blood samples of control subjects.

62. (New) The method of claim 61, wherein said control subjects are selected from the group consisting of: subjects classified as healthy subjects and subjects classified as having rheumatoid arthritis.

63. (New) The method of claim 62, wherein said control subjects are classified as healthy subjects.

64. (New) The method of claim 63, further comprising classifying said test subject as being a candidate for having rheumatoid arthritis if said level of RNA encoded by said gene in said blood sample of said human test subject is significantly different from that of said control subjects classified as healthy subjects.

65. (New) The method of claim 63, wherein said gene is differentially expressed in said blood sample of said human test subject relative to said samples of said control subjects classified as healthy subjects with a p value less than 0.05.

66. (New) A method of screening a human test subject for being a candidate for having rheumatoid arthritis, said method comprising:

(a) detecting RNA encoded by a cell division cycle associated 1 (CDCA1) gene in a blood sample of said test subject, using an oligonucleotide of predetermined sequence which is specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample; and

(b) quantifying a level of RNA encoded by said gene in said sample of said test subject; and

(c) comparing said level of RNA in said sample of said test subject to a quantified level of control RNA encoded by said gene in blood samples of control subjects classified as healthy subjects;

wherein said test subject is a candidate for having rheumatoid arthritis if said level of RNA encoded by said gene in said blood sample of said human test subject is significantly different relative to that of said control subjects classified as healthy subjects with a p value less than 0.05.

67. (New) The method of claim 58, 59 or 66, wherein said blood sample is selected from the group consisting of: a whole blood sample, a blood sample which has not been fractionated into cell types, and a blood sample which comprises leukocytes which have not been fractionated into cell types.

68. (New) The method of claim 60, wherein said blood sample is selected from the group consisting of: a whole blood sample, a blood sample which has not been fractionated into cell types, and a blood sample which comprises leukocytes which have not been fractionated into cell types.

69. (New) The method of claim 61, wherein:

> (i) said blood sample of said test subject and said blood samples of said control subjects are whole blood samples; or

> (ii) said blood sample of said test subject and said blood samples of said control subjects are blood samples which have not been fractionated into cell types; or

> (iii) said blood sample of said test subject and said blood samples of said control subjects are blood samples which comprise leukocytes which have not been fractionated into cell types.

70. (New) A method of classifying expression of a gene encoding a cell division cycle associated 1 (CDCA1) gene in a human test subject, said method comprising:

> (a) quantifying a level of RNA encoded by said gene in a blood sample of said test subject; and

(b) comparing said level of step (a) with quantified levels of RNA encoded by said gene in blood samples of control subjects classified as having rheumatoid arthritis; and

(c) comparing said level of step (a) with quantified levels of RNA encoded by said gene in blood samples of control subjects classified as healthy subjects;

wherein a determination from steps (b) and (c) that said level of step (a) is statistically similar to said levels in said samples of said subjects classified as having rheumatoid arthritis and is statistically different relative to said levels in said samples of said subjects classified as healthy subjects, results in a classification of CDCA1 gene expression in said test subject with that of said subjects classified as having rheumatoid arthritis, and wherein a determination from steps (b) and (c) that said level of step (a) is statistically different relative to said levels in said samples of said subjects classified as having rheumatoid arthritis and is statistically similar to said levels in said samples of said subjects classified as healthy subjects, results in a classification of CDCA1 gene expression in said test subject with that of said subjects classified as healthy subjects.

71. (New) The method of claim 60, wherein said quantifying of said level of RNA encoded by said gene is effected by quantifying said level of RNA relative to a housekeeping gene.

72. (New) The method of claim 60, wherein said quantifying of said level of RNA encoded by said gene is effected by quantification of cDNA complementary to RNA encoded by said gene.

73. (New) The method of claim 61, wherein said control subjects do not have rheumatoid arthritis.

74. (New) The method of claim 60, wherein said quantifying of said level of RNA encoded by said gene is effected using quantitative PCR.

75. (New) The method of claim 60, wherein said quantifying of said level of RNA encoded by said gene is effected using an array.

76. (New) The method of claim 49, wherein said human test subject is suspected of having rheumatoid arthritis.

77. (New) The method of claim 60, 68 or 72, wherein said human test subject is suspected of having rheumatoid arthritis.